

12 January 1965

MEMORANDUM FOR: Director of Medical Services

SUBJECT: Physical Fitness

REFERENCE: Memorandum dated 2 June 1964

1. The following is submitted for review as the Projected Physical Fitness Program for Central Intelligence Agency.

A. Purpose

To assist every Agency employee to:

1. Develop a personal program of "self disciplined" physical conditioning and fitness.
2. Provide opportunity for individual participation in an organized program with medical guidance.

B. Requirements

1. Appointment of Agency Physical Fitness Committee with equitable representation and responsibility to:
  - a. determine scope and effectiveness of program.
  - b. determine efficient utilization of professional and voluntary personnel.
2. Authorization for the Office of Medical Services to:
  - a. establish a system of classification of participants by--
    - (1) medical evaluations
    - (2) medical examinations

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- b. Undertake the participant orientation and education regarding medical concepts of physical exercise--its benefits and dangers; the relation of exercise to fatigue, heart, emotion, aging, weight, physical handicaps, feminine hygiene, convalescence, etc.
- c. Direct participant coordination with Office of Medical Services Physiotherapists, Athletic Instructors, and Agency Supervisors.
- d. Conduct periodic survey of selected participants, including Telemetric Stress Analyses as part of the overall Agency Preventive Medicine Theme.

C. Program

The initial program is based on individual participation. It is recommended this program be sanctioned by the issuance of a DCI policy statement to all employees.

Distribution of:

- 1. Advisory pamphlet and outline for Physical Fitness (Attachment No. 1).
- 2. Information Bulletin on Physical Fitness Exercise Facility.
- 3. Open invitation by Office of Medical Services to all handicapped personnel for Office of Medical Services advice regarding Physical Fitness participation including consultation with Clinical Division Physiotherapists (Attachment No. 2).

STATINTL

Chief, Clinical Division/OMS

OMS/CD:GPG:ho

Attachments:

Outline for Physical

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Outline Under Supervision of Physiotherapists

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B. Exercises and Their Uses

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- c. Wing Stretcher
- d. Half Knee Bends
- e. Arm Circles
- f. Body Bender

2. Conditioning Exercises

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- b. Sprinter
- c. Sitting Stretch
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- f. Leg Raiser
- g. Flutter Kick

3. Circulatory Activities

- a. Walking
- b. Jump Rope
- c. Run in Place
- d. Straddle Hop

C. Weight Training, Isometrics and Figure Building

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- b. Reverse Curls (for the arms)
- c. Standing Press (for the arms)
- d. Pullups (for the shoulders)
- e. Prone Press (for the chest)
- f. Half Squats (for the legs)

2. Isometrics

- a. For the Neck
- b. For the Neck
- c. For the Neck
- d. For the Upper Body
- e. For the Upper Body
- f. For the Upper Body
- g. For the Arms
- h. For the Arms and Chest
- i. For the Arms and Chest

2. Isometrics (Continued)

- j. For the Abdomen
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- a. The Press (for the bustline)
- b. Pullover (for the bustline)
- c. Semaphore (for the bustline)
- d. Knee Lifts (for the waist)
- e. Crossover (for the waist)
- f. Cheerleader (for the hips and thighs)
- g. Bicycle (for the hips and thighs)
- h. Ballet Stretch (for the hips and thighs)
- i. Two-way Stretch (for the hips and thighs)
- j. Rocker (for the calves and ankles)
- k. Hop (for the calves and ankles)
- l. Stemwinder (for calves and ankles)

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- 1. Rowing Machine
- 2. Bicycle Machine
- 3. Chest Weights
- 4. Jump and Reach Board
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- 8. Chin Bars
- 9. Punching Bags - Large and Small
- 10. Climbing Rope
- 11. Medicine Balls
- 12. Jump Ropes
- 13. The "Universal Gym"
  - a. Arm Curls (for the biceps, wrists and forearms)
  - b. Posture Row (for arms, chest and back)
  - c. Tri-extension (for triceps muscles)
  - d. Pulley Chins (for shoulders, arms and back)
  - e. Shoulder Press (for shoulders, back and arms)
  - f. Calf Raisers (for the calf muscles and ankles)
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  - h. Leg Press (for thighs and knees)

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- G. Program for Men Ages 18-39
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- H. Program for Women Ages 18-39
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## PHYSICAL FITNESS

### I. PHYSICAL FITNESS

#### A. Definition

Physical fitness is the ability to continue effort and perform well over a period of time. This ability requires good health, strength, stamina, and skill. It is a reflection of your ability to work with vigor and pleasure, without undue fatigue, with energy left for enjoying hobbies and recreational activities, and for meeting unforeseen emergencies.

#### 1. Why Is It Necessary

Physical Fitness is founded on good health. When agility, coordination and endurance are at optimum, one feels better, work efficiency is increased, and the pressures of everyday life are minimized. A worthy way to spend your leisure time is by performing physical activity.

#### B. Exercises and Their Uses

Exercise is the only way to attain good physical fitness. It develops strength and endurance, skill and agility, poise and grace, good muscle tone and posture. It enhances weight control and prevention of degenerative diseases. It is one of the factors in maintaining the health of the heart and blood vessels. Enjoyable exercise can provide relief from tension and serves as a safe and natural tranquilizer. Feeling physically fit helps you to build a desirable "self-concept." Your reflexes are quickened and can help to protect you against accidents in times of emergency.

There are three general types of exercises--  
(1) warm-up, (2) conditioning, and (3) "circulatory."

1. Warm-up Exercises

The warm-up exercises stretch and limber up the muscles and speed up the action of the heart and lungs, thus preparing the body for greater exertion and reducing the possibility of unnecessary strain.

There are six basic warm-up exercises:

- a. Bend and Stretch - stand erect, feet shoulder width apart. Bend trunk forward and down, flexing knees. Stretch gently in attempt to touch fingers to toes or floor. Return to starting position. (10)
- b. Knee Lift - stand erect, feet together, arms at sides. Raise left knee as high as possible, grasping leg with hand and pulling knee against body while keeping back straight. Lower to starting position. Repeat with right knee (10 right, 10 left).
- c. Wing Stretcher - stand erect elbows at shoulder height, fists clenched in front of chest. Thrust elbows backward vigorously without arching back. Keep head erect, elbows at shoulder height. Return to starting position. (20)
- d. Half Knee Bends - stand erect, hands on hips. Bend knees halfway while extending arms forward, palms down. Return to starting position. (10)
- e. Arm Circles - stand erect, arms extended sideward at shoulder height, palms up. Describe small circles backward with hands. Keep head erect. Do 15 backward circles. Reverse, turn palms down and do 15 small circles forward.

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width apart, hands behind neck, fingers interlaced. Bend trunk sideward to left as far as possible, keeping hands behind neck. Return to starting position. Repeat to the right (10 left, 10 right).

## 2. Conditioning Exercises

The conditioning exercises are systematically planned to tone up abdominal, back, leg, arm and other major muscles.

There are seven basic conditioning exercises.

- a. Toe Touch - stand at attention. Bend trunk forward and down keeping knees straight, touching fingers to ankles. Bounce and touch fingers to toes. Return to starting position.
- b. Sprinter - squat, hands on floor, fingers pointed forward, left leg fully extended to rear. Reverse position of feet in bouncing movement, bringing left foot to hands and extending right leg backward, all in one motion. Reverse feet again, returning to starting position.
- c. Sitting Stretch - sit, legs spread apart, hands on knees. Bend forward at waist, extending arms as far forward as possible. Return to starting position.
- d. Push Up (knee push up for women) - lie on floor, face down, legs together (women--knees bent with feet raised off floor), hands on floor under shoulders, palms down with fingers pointing straight ahead. Push body off floor (women--upper body) by extending arms, so that weight rests on hands and toes (women--body is in straight line from head to knees). Lower body until chest touches floor.

together, arms extended beyond head. Bring arms forward over head, roll up to sitting position, sliding hands along legs, grazing ankles. Roll back to starting position.

- f. Leg Raiser - right side of body on floor, head resting on right arm. Lift leg about 24 inches off floor, then lower it. Do on both sides the required number of repetitions.
- g. Flutter Kick - lie face down, hands tucked under thighs. Arch the back, bringing chest and head up, then flutter kick continuously moving the legs 8 to 10 inches apart. Kick from hips with knees slightly bent. Count each kick as one.

### 3. "Circulatory" Exercises

The circulatory activities produce contractions of large muscle groups for relatively longer periods than the conditioning exercises--to stimulate and strengthen the circulatory and respiratory systems.

There are four basic circulatory activities.

- a. Walking - maintain a pace of 120 steps per minute for a distance of one-half mile for women and one mile for men. Swing arms and breathe deeply.
- b. Jump Rope - skip or jump rope continuously using any form for 30 seconds and then rest for 30 seconds (60 seconds for women). Repeat 2 times.
- c. Run In Place - raise each foot at least 4 inches off floor and jog in place. Count one each time left foot touches floor. Complete 60 running steps (50 for women), then do 10 straddle hops. Complete 2 cycles of alternate running and hopping for 2 minutes.

d. Straddle Hop - at attention. Swing arms sideward and upward, touching hands above head (arms straight) while simultaneously moving feet sideward and apart in a single jumping motion. Spring back to starting position.

**C. Weight Training, Isometrics and Figure Building**

**1. Weight Training - Barbells**

Weight training is an excellent method of developing muscular strength and muscular endurance. Where equipment is available, it may be used as a supplement to the seven conditioning exercises for the men.

There are six basic exercises one can do with barbells. For each exercise select a weight you can lift six times without strain. When you have progressed to the point where you can lift the weight 10 times without strain, add 5 pounds. In each exercise do three sets of 6 to 10 repetitions. Rest after completing each set.

a. Curls (for the arms) - stand erect, feet shoulder-width apart. Hold bar down in front of body, with palms facing outward and shoulder-width apart. Curl the bar upward to the chin, bending arms at elbows. Return to starting position.

b. Reverse Curls (for the arms) - stand erect, feet shoulder-width apart. Hold bar down in front of body, with palms facing inward and shoulder-width apart. Curl the bar upward to the chin, bending elbows. Return to starting position.

c. Standing Press (for the arms) - stand erect, supporting weight at shoulder level, with feet and hands shoulder-width apart. Press weight overhead to extended arm position. Return to starting position.

d. Full Ups (for the shoulders) - stand erect, feet shoulder-width apart. Hold bar down and 2 to 3 inches apart. Pull bar up to chin, holding elbows high. Return to starting position.

e. Prone Press (for the chest) - lie on back on floor or bench, with legs straight. Support weight with palms facing out and spaced shoulder-width apart. Press weight up to extended arm position. Return slowly to starting position.

f. Half Squats (for the legs) - stand erect, feet shoulder-width apart, with weight supported across shoulders. Bend knees halfway. Return to starting position. A board under the heels will improve balance.

## 2. Isometrics

Isometric contraction exercises take very little time, require no special equipment. They are excellent muscle strengtheners and, as such, valuable supplements.

The idea of isometrics is to work out a muscle by pushing or pulling against an immovable object such as a wall... or by pitting it against the opposition of another muscle. The basis is the "overload" principle of exercise physiology which holds that a muscle required to perform work beyond the usual intensity will grow in strength. Research has indicated that one hard 6 to 8 second isometric contraction per workout can, over a period of six months, produce significant strength increase in a muscle.

The exercises described in the following pages cover large muscle groups of the body. They can be performed almost anywhere and at almost any time.

There is no set order for doing them, nor do all have to be completed at one time. You can, if you like, do one or two in the morning, others at various times

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or even less time to spare.

For each contraction, maintain tension no more than eight seconds. Do little breathing during a contraction; breathe deeply between contractions. Start easily. Do not apply maximum effort in the beginning.

For the first three or four weeks, you should exert only about one-half of what you feel is your maximum force. Use the first 3 or 4 seconds to build up to this degree of force and the remaining 4 or 5 seconds to hold it.

For the next two weeks, gradually increase force to more nearly approach maximum. After about six weeks, it will be safe to exert maximum effort.

Pain indicates you are applying too much force; reduce the amount immediately. If pain continues to accompany any exercise, discontinue using that exercise for a week or two. Then try it again with about 50 percent of maximum effort. If no pain occurs, you can go on to gradually build up toward maximum.

There are thirteen different isometric contraction exercises.

- a. For the Neck - sit or stand, with interlaced fingers of hands on forehead. Forcibly exert a forward push of head while resisting equally hard with hands.
- b. For the Neck - sit or stand, with interlaced fingers of hands behind head. Push head backward while exerting forward pull with hands.
- c. For the Neck - sit or stand, with palm of left hand on left side of head. Push with left hand while resisting with head and neck. Reverse using right hand on right side of head.

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- d. For the Upper Body - stand, back to wall, hands at sides, palms toward wall. Press hands backward against wall, keeping arms straight.
- e. For the Upper Body - stand, facing wall, hands at sides, palms toward wall. Press hands forward against wall, keeping arms straight.
- f. For the Upper Body - stand in doorway or with side against wall, arms at sides, palms toward legs. Press hand(s) outward against wall or door frame, keeping arms straight.
- g. For the Arms - stand with feet slightly apart. Flex right elbow, close to body, palm up. Place left hand over right. **Forcibly attempt to curl right arm upward, while giving equally strong resistance with the left hand. Repeat with left arm.**
- h. For the Arms and Chest - stand with feet comfortably spaced, knees slightly bent. Clasp hands, palms together, close to chest. Press hands together and hold.
- i. For the Arms and Chest - stand with feet slightly apart, knees slightly bent. Grip fingers, arms close to chest. Pull hard and hold.
- j. For the Abdomen - stand, knees slightly flexed, hands resting on knees. Contract abdominal muscles.
- k. For the Lower Back, Buttocks and Backs of Thighs - lie face down, arms at sides, palms up, legs placed under bed or other heavy object. With both hips flat on floor, raise one leg, keeping knee straight so that heel pushes hard against the resistance above. Repeat with opposite leg.

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1. For the Legs - sit in chair with left ankle crossed over right, feet resting on floor, attempt to straighten right leg while resisting with the left. Repeat with opposite leg.
- m. For the Inner and Outer Thighs - sit, legs extended with each ankle pressed against the outside of sturdy chair legs. Keep legs straight and pull toward one another firmly. For outer thigh muscles, place ankles inside chair legs and exert pressure outward.

### 3. Figure Building Exercises for Women

There are 12 good figure-building exercises for the women.

- a. The Press (for the bustline) - stand or sit erect. Clasp hands, palms together close to chest. Press hands together hard and hold for 6 to 8 seconds. Repeat 3 times, resting briefly and breathing deeply between repetitions.
- b. Pullover (for the bustline) - lie on back with arms extended beyond head. Hold books or other objects of equal weight in hands. Lift books overhead and down to thighs, keeping arms straight. Return slowly to starting position. Repeat 3 to 6 times.
- c. Semaphore (for the bustline) - lie on back with arms extended sideward at shoulder level. Hold books or other objects of equal weight in hands. Lift books to position over body, keeping arms straight. Lower slowly to starting position. Repeat 3 to 6 times.

d. Knee Lifts (for the waist) - lie on back

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arms at sides. Bring one knee as close  
as possible to chest, keeping hands on  
floor. Extend leg straight up. Bend knee  
and return to chest. Return to starting  
position. Repeat 5 to 10 times, alternating  
legs during exercise. The double knee  
lift is done in the same manner, raising  
both legs at the same time. Do 5 to 10  
repetitions.

e. Crossover (for the waist) - lie on back,  
arms extended sideward, palms down.  
Raise right leg to vertical position and  
move slowly to left until almost touching  
floor. Keep arms, head and shoulders on  
floor. Return to starting position. Same  
action to other side. Do 5 to 10 repetitions.

f. Cheerleader (for the hips and thighs) - kneel  
on floor, back straight, hands on hips. Bend  
backward as far as possible, keeping knees  
on floor and body straight. Return to  
starting position. Repeat 10 to 15 times.

g. Bicycle (for the hips and thighs) - lie on  
back with hips and legs supported by hands.  
Simulate bicycle pumping action with legs.  
Pump 50 to 100 times.

h. Ballet Stretch (for the hips and thighs) - stand  
erect with left hand resting on back of chair  
for support. Raise right leg sideward as high  
as possible. Return to starting position.  
Do 5 to 10 repetitions, then repeat exercise  
with left leg.

i. Two-way Stretch (for the hips and thighs) -  
kneel with hands on floor, back straight.  
Arch back, bend head down and bring left  
knee as close as possible to chin. Lift head  
high and extend left leg as far backward and up  
as high as possible. Repeat 6 to 10 times  
with each leg.

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j. Rocker (for calves and ankles) - stand erect, feet together, hands on hips. Rock back on heels, keeping legs straight and raising toes off floor. Rock forward on toes, lifting heels off floor. Repeat 10 to 20 times.

k. Hop (for calves and ankles) - stand erect, feet close together, hands on hips. Hop lightly on both feet 50 times, on right foot 25 times, on left foot 25 times, on both feet 50 times.

l. Stemwinder (for calves and ankles) - stand erect, left foot lifted clear of floor. Rotate left foot in small circles, 20 times. Repeat with right foot.

#### D. Exercise Room

An exercise room offer an excellent means for maintaining physical fitness. Many different types of equipment will be found here along with a starting exercise for each device.

##### 1. Rowing Machine

The rowing machine is an excellent way to exercise the arms, shoulders, chest and mid-section. A good starting exercise for men would be to row, the correct way, for three minutes without stopping. Women should row for 1 1/2 minutes. The correct way to row on this machine is as follows: keep knees straight or slightly flexed. Hands are closest to each other as you come forward, bending at waist. Hands are apart as you go back. Let your arms, back and mid-section do the work, not your legs.

##### 2. Bicycle Machine

The bicycle machines should be pumped for a mile for men and 3/4 of a mile for women at the start. One should set his or her own pace. If you pedal fast, you are on the machine a shorter time; if you go slow it takes longer and the exercise evens itself out in the long run.

The chest weights should be pulled 50 right and 50 left by the men and 25 each way by the women. The back is to the wall and the heels next the floor board.

4. Jump and Reach Board

A jump and reach board is used by pushing up the graduated panel with one arm as high as you can reach. Then take one magnet in your hand and stand with shoulder next to board. Jump as high as you can and leave magnet up on board. This will show in inches just how high you have jumped off the floor.

5. Stall Bars

The Swedish stall bars can be used for a number of exercises. The main two are the "L" exercise and the back bender. The "L" is done by hanging by the hands, back against bars, from the top bar. Bring legs up slowly until they are perpendicular to the wall and body forms an "L". Let back down slowly. Both men and women should try for 5 of these to start. The back bender is done by sitting on a bench facing the bars. Place toes between two lowest bars. Hands behind head, with fingers interlaced. Lean back slowly until fingers touch floor. Return to starting position. Both men and women should try for 5 to 10 to start. These two exercises are rather difficult, probably more for men than women. Attempt them only if you feel you can do them.

6. Parallel Bars

The low parallel bars are used for push ups for men and balancing exercises for women. The push ups are done by placing the hands on the bars, toes on the mat. Let body go down as far as you can, push up to point where elbows are locked. Try for 5 to 10 to start. Women may do head and shoulder stands and

try to hold their balance for three one-minute intervals.

7. Abdominal Boards

On the abdominal board, we do sit ups. With feet under strap, legs over bar and hands behind head, fingers interlaced, sit up and touch your right elbow to your left knee. Keep knees straight. Lie back. Sit up, touch left elbow to right knee, lie back. Both men and women should try for 5 to 10 to start. Reverse sit ups can be done on a mat if these are too difficult. Lie on back. Lift legs up, keeping knees straight and arms at side or extended and hands holding on to low bar of stall bars, to point over head. Return slowly to starting position. Try for 10 of these.

8. Chin Bars

Chin ups are done on the chin bars. Men do as many as you can.

9. Punching Bags

- a. Two small speed bags are used for coordination and timing more than for the exercise.
- b. The large training bag can be used for punching while moving around it or for any purpose one might want to use it for -- e. g., karate, blocking.

10. Climbing Rope

The climbing rope should be climbed with a hand-over-hand motion while going up and a hand-over-hand motion while coming down. Do not slide down the rope.

11. Medicine Balls

The medicine balls can be thrown at the stomach and caught as they rebound off and are thrown back. One can also roll around on the ball on a mat to exercise the stomach muscles.

12. Jump Ropes

The jump ropes can be used by jumping for 30 seconds and resting for 30 seconds doing three series.

13. The "Universal Gym"

The "universal gym" is an excellent weight training machine which can be used instead of, or along with, barbells. It takes less time to exercise with this machine than barbells, and it is safer. There are eight basic exercises one can do with the "universal gym." The women can eliminate the arm curls and the tri-extension exercises. These eight exercises are done as follows: when first attempting to lift any weight, select a weight you believe you can lift 10 times. If it is too heavy, put a minus (-) next to that attempted weight on your weight card so that you will know to decrease the weight the next time. If the weight selected is too light and you can do 10 repetitions with ease, put a plus (+) next to the attempted weight and increase the next time. Once you have found a good weight for each exercise, perform the exercises with that weight until it gets easier, then increase the weight and do the same number of repetitions. Some of the exercises will take longer to increase than others.

- a. Arm Curls (for the biceps, wrists and forearms) - using lower pulley station, raise weight to point where forearms are parallel to floor and elbows are next to body. Pull weight up, bending elbows and keeping back straight. Bend only at elbows so your arms do the lifting. Do not bend at waist.
- b. Posture Row (for arms, chest and back) - using lower pulley station, bend at waist and pull handles in towards chest. Your elbows will bend and point out.

stand in front of bar at upper pulley station. Hold bars with palms on top facing the floor. Elbows slightly bent, pull bar down until it touches body. Let back up slowly.

- d. Pulley Chins (for shoulders, arms and back) - kneel below bar. Reach up and grasp bar at about six inches beyond shoulder width. Pull bar down to point under chin. Let back up slowly.
- e. Shoulder Press (for shoulders, back and arms) - sit on stool, either facing machine or with back to it, with feet on bottom bar of stool. Grasp handles and push weight straight up until elbows are straight. Let back down slowly.
- f. Calf Raisers (for the calf muscles and ankles) - stoop under handles and place toes on board directly under handles. Keep heels on floor and straighten up so knees are no longer bent. Either hold handles or let bars rest on shoulders with hands holding bars in front of shoulders (a towel may be folded and draped across your shoulders to keep discomfort to a minimum). Raise up on toes to maximum. Let heels back down to floor slowly. Lift only with your toes, don't push with arms at all. Let weight rest on your hands or shoulders.
- g. Chest Press (for chest, shoulders and arms) - lie on bench, head under handles and feet flat on floor. Hold handles and push weight up until elbows are straight. Let back down slowly.
- h. Leg Press (for thighs and knees) - select chair position. Sit in chair with hands holding on to bar at the bottom and feet flat on the pedals. Push legs out until knees are straight. Let weight back down slowly to point where it almost touches the other weights and push out again.

There is no substitute exercise for just plain running. One's wind, arms, leg and whole internal structure is benefited. The heart, being a muscle, is strengthened by running. Physicians agree that a good program of running, starting slowly and increasing gradually to a point of two or three miles daily, will strengthen the heart and help prevent heart attacks. Indoor and outdoor tracks are the best places to run because you can know the distance you travel and are not inconspicuous or in anyone's way.

F. Swimming

Swimming is also a fine exercise, especially distance swimming. Like running, it should be started slowly, short distances with intervals of rest inbetween, and increased until you can swim long distances without resting. Indoor and outdoor olympic size pools are necessary.

G. Program for Men - ages 18-39

H. Program for Women - ages 18-39

I. Program for Men - ages 40 and above

J. Program for Women - ages 40 and above

OUTLINE OF PHYSICAL FITNESS PROGRAM  
UNDER SUPERVISION OF CLINICAL  
DIVISION PHYSIOTHERAPIST  
OFFICE OF MEDICAL SERVICES

The following areas of the Agency Physical Fitness Program are especially suited to skills, training and guidance of the Physiotherapist in coordination with the Athletic Instructors of the Agency Physical Exercise Facility.

I. Rehabilitation

A. Exercise and treatment programs for employees with orthopedic problems such as:

1. Low back pain
2. Arthritis
3. Sprains, strains, and fractures
4. Bursitis
5. Myositis
6. Knee deformities

B. Exercise and treatment programs for medical problems such as:

1. Circulatory diseases
2. Heart disease
3. Emphysema

II. Physical Conditioning

- A. Exercise program to prevent poor posture.
- B. Exercise program to maintain good range of motion in all joints and promote good muscle tone.
- C. Program to prevent muscle pain from too vigorous exercise, or to relieve such pain when it does occur.
- D. Provide aid in weight control.
- E. Set goal of increased strength and endurance as an answer to fatigue.

## THE PHYSICAL THERAPIST IN A PHYSICAL FITNESS PROGRAM

No one can dispute the benefits of "keeping fit"- of being able to work with vigor and enthusiasm without undue fatigue and with energy left over for family life, hobbies and recreation. More and more business organizations and government agencies are realizing the value of physical fitness. Their employees, they have found, are happier and are better workers when they are in good health and physical condition.

Thus, many of these organizations are seeing that their employees have the opportunity to keep fit by providing physical fitness programs as part of their employees' recreation association activities. Many of these programs are conducted by the employees themselves, using materials from the President's Council on Physical Fitness, or the much publicized Royal Canadian Air Force Guide to Physical Fitness.

However, for a program to be complete, it must include all employees. And this means the employee with arthritis, bursitis, low back pain, and deformities. It means the employee recovering from a stroke, the employee with cardiovascular disease, and the employee with emphysema. It is in this area that a physical therapist can play a valuable role in the total physical fitness program. Working with the employees' health physicians, she can develop special programs of exercise tailored to suit the individual needs of those who otherwise could not participate in exercise activities. In other words, the therapist, through her training and experience, can add the dimension of rehabilitation to the physical fitness program.

But why bother with rehabilitation, some ask. The answer is simple. An agency such as this has too much invested in many of its employees to lose them to a chronic disease or other debilitating ailment. Thus it is to the agency's advantage to keep its employees on the job. Let me illustrate with a hypothetical example, or two:

A middle-aged secretary with many years experience in the agency, suffers from cervical arthritis. Because this disorder is characterized by much pain and aching in the back and neck regions, she becomes easily fatigued and her work suffers. The physical therapist will teach her postural exercises which will strengthen her shoulder-girdle muscles. Depending on the nature of the individual case, cervical traction might be called for. The resulting improvement in posture will mean less stress and strain on the cervical vertebra, and thus less pain.

(Continued)

A key figure in the agency suffers from chronic low back pain. He feels he can't "trust" his back because of sudden flare-ups of pain which make any movement extremely painful. Yet, he must make trips to all parts of the world, often on short notice. The therapist will start this employee on a regimen of strengthening exercises, the specific ones depending upon the cause of the trouble. Such pain might come from a fracture or dislocation; arthritis; degenerative disc; neoplasms; osteoporosis; systemic disease; and other causes. Exercises may include one such as the "pelvic tilt." This simple maneuver strengthens the abdominal muscles which are a great trunk stabilizer. Thus, the weaker back muscles are relieved to a great extent. Stretching exercises are also important in treating low back pain because they can reduce the severity of acute muscle spasm attacks. This employee's own personal physician may have prescribed a brace to be worn during working hours. In this event, the therapist will help him get used to the brace and show him how to wear it for maximum comfort. Lastly, the employee must learn to live with his troublesome back. The therapist will teach him how to protect it without curtailing his normal activity to too great an extent. He will learn how to stoop, push and lift - even how to properly pick up a golf club.

The employee with emphysema -- This man is active in his job and travels quite often. Yet because of his emphysema he becomes fatigued quite easily. He finds he must spend more and more time resting. Since there is no cure for this disease, the only relief is through rehabilitation. In fact, the patient must learn to breathe all over again, using diaphragmatic breathing. Trained to teach muscle re-education, the therapist can provide much assistance and encouragement to this employee. Learning to breathe all over again is not easy. However, the therapist is experienced in the oftentimes slow learning process and in dealing with the spells of discouragement which often occur. Besides teaching the breathing technique, the therapist must teach the employee often exercises designed to strengthen the necessary abdominal muscles. She will also teach him special maneuvers to help clear air passages which often become obstructed with mucus.

Last, but not least, the knowledge of the physical therapist can be used for prophylactic purposes. For example, she can devise special postural exercises for secretaries and thus help them avoid later orthopedic problems caused by continuous slumping. She can keep check on the various activities in the physical fitness regional program to see that they provide for maintenance for a good range of motion in all joints and also stimulate good muscle tone. She can help employees avoid exercises which will result in muscle pain or other injury.

In general, the physical therapist's contribution is a broad one, not limited to the care of those with chronic ailments or deformities. Instead, she can play a valuable role in a comprehensive physical fitness program which seeks to promote sound physical conditioning and good health in all employees.